

What is claimed is:

1. A printing plate material comprising an aluminum support, and provided thereon, an image formation layer containing thermoplastic particles and a light-to-heat conversion dye, the printing plate material being capable of being developed on a printing press, wherein the image formation layer changes in color due to infrared laser exposure, and the aluminum support is manufactured by a method comprising the steps of subjecting an aluminum plate to electrolytic surface roughening treatment, subjecting the electrolytic surface roughened aluminum plate to etching treatment in an aqueous alkali solution, and subjecting the resulting aluminum plate to anodization treatment.
2. The printing plate material of claim 1, wherein an etching amount of the electrolytic surface roughened aluminum plate etched by the etching treatment is 0.05 to 2.0 g/m².
3. The printing plate material of claim 1, wherein mechanical surface roughening treatment is carried out prior to the electrolytic surface roughening treatment.
4. The printing plate material of claim 2, wherein mechanical surface roughened treatment is carried out prior to the electrolytic surface roughening treatment.

5. The printing plate material of claim 1, wherein the light-to-heat conversion dye is a cyanine dye having an absorption maximum of from 700 to 12,000 nm.

6. The printing plate material of claim 1, wherein the light-to-heat conversion dye content of the image formation layer is from 0.01 to 10% by weight and the thermoplastic particle content of the image formation layer is from 1 to 90% by weight.

7. The printing plate material of claim 1, wherein the light-to-heat conversion dye in the image formation layer changes in color due to infrared laser exposure.

8. The printing plate material of claim 1, wherein the image formation layer further contains a water soluble resin.

9. The printing plate material of claim 8, wherein the water soluble resin is oligosaccharide, polysaccharide or polyacrylic acid.

10. The printing plate material of claim 9, wherein the oligosaccharide is trehalose.

11. A method of manufacturing a printing plate material comprising an aluminum support, and provided thereon, an image formation layer, the printing plate material being capable of being developed on a printing press, the method comprising the steps of:

subjecting an aluminum plate to electrolytic surface roughening treatment;

subjecting the electrolytic surface roughened aluminum plate to etching treatment in an aqueous alkali solution to give an etching amount of the electrolytic surface roughened aluminum plate of 0.05 to 2.0 g/m²;

subjecting the resulting aluminum plate to anodization treatment, whereby an aluminum support is obtained; and

providing on the aluminum support an image formation layer which contains thermoplastic particles and a light-to-heat conversion dye, and changes in color due to infrared laser exposure.

12. The method of claim 11, wherein mechanical surface roughening treatment is carried out prior to the electrolytic surface roughening treatment.

13. The method of claim 11, wherein the light-to-heat conversion dye is a cyanine dye having an absorption maximum of from 700 to 12,000 nm.

14. The method of claim 11, wherein the light-to-heat conversion dye content of the image formation layer is from 0.01 to 10% by weight and the thermoplastic particle content of the image formation layer is from 1 to 90% by weight.

15. The method of claim 11, wherein the light-to-heat conversion dye in the image formation layer changes in color due to infrared laser exposure.

16. The method of claim 11, wherein the image formation layer further contains a water soluble resin.

17. The method of claim 16, wherein the water soluble resin is oligosaccharide, polysaccharide or polyacrylic acid.

18. The method of claim 17, wherein the oligosaccharide is trehalose.